

WHAT IS CLAIMED IS:

- 1 1. A transformed plant cell comprising a recombinant nucleic acid that encodes a
2 heterologous C-repeat/dehydration-responsive element-binding factor (CBF), wherein the
3 cell is naturally chilling-sensitive and expression of CBF increases tolerance of the cell to
4 chilling, oxidative stress, water-deficit, or salt.
- 1 2. The transformed plant cell of claim 1, wherein the factor is Arabidopsis CBF1.
- 1 3. The transformed plant cell of claim 2, wherein the expression of the factor is driven
2 by a stress-inducible promoter.
- 1 4. The transformed plant cell of claim 3, wherein the transformed plant cell is a dicot
2 plant cell.
- 1 5. The transformed plant cell of claim 4, wherein the transformed plant cell is a tomato
2 cell.
- 1 6. The transformed plant cell of claim 2, wherein the transformed plant cell is a dicot
2 plant cell.
- 1 7. The transformed plant cell of claim 6, wherein the transformed plant cell is a tomato
2 cell.
- 1 8. The transformed plant cell of claim 1, wherein the expression of the factor is driven
2 by a stress-inducible promoter.
- 1 9. The transformed plant cell of claim 8, wherein the transformed plant cell is a dicot
2 plant cell.
- 1 10. The transformed plant cell of claim 9, wherein the transformed plant cell is a tomato
2 cell.

- 1 11. The transformed plant cell of claim 1, wherein the transformed plant cell is a dicot
2 plant cell.
- 1 12. The transformed plant cell of claim 11, wherein the transformed plant cell is a tomato
2 cell.
- 1 13. A transgenic plant comprising a recombinant nucleic acid that encodes a heterologous
2 C-repeat/dehydration-responsive element-binding factor (CBF), wherein the plant is naturally
3 chilling-sensitive and expression of the factor increases tolerance of the plant to chilling,
4 oxidative stress, water-deficit, or salt.
- 1 14. The transgenic plant of claim 13, wherein the factor is Arabidopsis CBF1.
- 1 15. The transgenic plant of claim 14, wherein the expression of the factor is driven by a
2 stress-inducible promoter.
- 1 16. The transgenic plant of claim 15, wherein the transgenic plant is a dicot plant.
- 1 17. The transgenic plant of claim 16, wherein the transgenic plant is tomato.
- 1 18. The transgenic plant of claim 14, wherein the transgenic plant is a dicot plant.
- 1 19. The transgenic plant of claim 18, wherein the transgenic plant is tomato.
- 1 20. The transgenic plant of claim 13, wherein the expression of the factor is driven by a
2 stress-inducible promoter.
- 1 21. The transgenic plant of claim 20, wherein the transgenic plant is a dicot plant.
- 1 22. The transgenic plant of claim 21, wherein the transgenic plant is tomato.

- 1 23. The transgenic plant of claim 13, wherein the transgenic plant is a dicot plant.
- 1 24. The transgenic plant of claim 23, wherein the transgenic plant is tomato.
- 1 25. A method of producing a transformed plant cell, the method comprising:
2 introducing into a plant cell a recombinant nucleic acid encoding a heterologous C-
3 repeat/dehydration-responsive element-binding factor (CBF), and
4 expressing the factor in the cell,
5 wherein the cell is naturally chilling-sensitive and expression of the factor increases tolerance
6 of the cell to chilling, oxidative stress, water-deficit, or salt.
- 1 26. The method of claim 25, wherein the factor is Arabidopsis CBF1.
- 1 27. The method of claim 25, wherein the expression of the factor is driven by a stress-
2 inducible promoter.
- 1 28. The method of claim 25, wherein the plant cell is a dicot plant cell.
- 1 29. The method of claim 28, wherein the plant cell is a tomato cell.
- 1 30. A method of producing a transgenic plant, the method comprising:
2 introducing into a plant cell a recombinant nucleic acid encoding a heterologous C-
3 repeat/dehydration-responsive element-binding factor (CBF),
4 expressing the factor in the cell, and
5 cultivating the cell to generate a plant,
6 wherein the plant is naturally chilling-sensitive and expression of the factor increases
7 tolerance of the plant to chilling, oxidative stress, water-deficit, or salt.
- 1 31. The method of claim 30, wherein the factor is Arabidopsis CBF1.

1 32. The method of claim 30, wherein the expression of the factor is driven by a stress-
2 inducible promoter.

1 33. The method of claim 30, further comprising growing the plant in the presence of an
2 exogenous gibberellic acid.

1 34. The method of claim 30, wherein the transgenic plant is a dicot plant.

1 35. The method of claim 34, wherein the transgenic plant is tomato.